

CLAIMS

1. A shredded tobacco supply device for a cigarette manufacturing machine, comprising:

a gravity chute through which shredded tobacco supplied thereto is let fall down, said gravity chute having a lower end for discharging the falling shredded tobacco therefrom;

a separation throat diverging sideways from an intermediate portion of said gravity chute and having an inlet opening into said gravity chute and an outlet spaced apart from the inlet in the diverging direction;

a primary separator for separating the shredded tobacco falling down through said gravity chute into light shreds which are introduced into said separation throat, and heavy shreds which are allowed to fall down through said gravity chute, in accordance with weights of the shreds, said primary separator producing a primary air jet traversing an interior of said gravity chute and directed toward the inlet of said separation throat;

a fluid bed trough extending from the outlet of said separation throat to a tobacco band of the cigarette manufacturing machine, said fluid bed trough having a conveyance surface for guiding the light shreds delivered from the outlet of said separation throat toward the tobacco band;

a separation duct extending downward from the conveyance surface, said separation duct having an open end opening in the conveyance surface in the vicinity of the outlet of said separation throat and directed toward the tobacco band, and a reception opening formed at an intermediate position thereof, the reception opening being connected to the lower end of said gravity chute for receiving the heavy shreds from said gravity chute into

said separation duct;

a secondary separator for separating the heavy shreds received by said separation duct into recovery shreds which are lifted upward through said separation duct and
5 delivered onto the conveyance surface of said fluid bed trough, and reject shreds which are allowed to fall down through said separation duct, in accordance with weights of the heavy shreds, said secondary separator emitting a secondary air jet from a position of said separation duct
10 upward of the reception opening, the secondary air jet being directed toward the open end and creating a rising current within said separation duct for lifting the recovery shreds upward; and

an air confluent nozzle extending from the outlet of
15 said separation throat, said air confluent nozzle having a cross-sectional flow area gradually decreasing with distance from the outlet of said separation throat toward the tobacco band and producing a transport flow by joining together the primary air jet from the outlet of said
20 separation throat and the secondary air jet from the open end of said separation duct, the transport flow causing a shred mixture of the light shreds delivered from the outlet of said separation throat and the recovery shreds delivered from the open end of said separation duct to be conveyed
25 along the conveyance surface of said fluid bed trough toward the tobacco band.

2. The shredded tobacco supply device according to claim 1, wherein said air confluent nozzle has an extension member extending from an upper edge of the outlet of said
30 separation throat, the extension member forming said air confluent nozzle in cooperation with the conveyance surface.

3. The shredded tobacco supply device according to

claim 2, wherein said separation throat has a ceiling wall and a bottom surface adjoining the conveyance surface, the extension member extending smoothly from the ceiling wall.

4. The shredded tobacco supply device according to
5 claim 3, wherein the extension member and the ceiling wall extend straight along a direction in which the primary air jet is emitted.

5. The shredded tobacco supply device according to
claim 3, wherein the extension member and the ceiling wall
10 are curved in downwardly convex form.

6. The shredded tobacco supply device according to
claim 2, wherein said air confluent nozzle has a nozzle
outlet at a distal end of the extension member, the nozzle
outlet having a height of 10 to 20 mm from the conveyance
15 surface.

7. The shredded tobacco supply device according to
claim 2, further comprising a plurality of accelerators
provided in said fluid bed trough for accelerating the
conveyance of the shred mixture on the conveyance surface
20 toward the tobacco band, said accelerators being arranged
at intervals in the direction of conveyance of the shred
mixture and each adapted to emit an air jet toward the
tobacco band.

8. The shredded tobacco supply device according to
25 claim 7, wherein a most upstream one of said accelerators
as viewed in the direction of conveyance of the shred
mixture is located inside the said confluent nozzle.

9. The shredded tobacco supply device according to
claim 1, wherein the conveyance surface of said fluid bed
30 trough is divided into first and second trough sections on
a downstream side of said air confluent nozzle, the first
and second trough sections being adapted to supply the
shred mixture to respective tobacco bands of a double track

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type cigarette manufacturing machine.